In the Matter of	)	
	)	
Recommendations of the Independent Panel	)	
Reviewing the Impact of Hurricane Katrina on	)	EB Docket No. 06-
119		
Communications Networks	)	

INTRODUCTION

My name is Gerald W. Murray. I have held Amateur Radio license WA2IWW since 1976, and have held the Amateur Extra class license since 1992.

I also hold the following FCC commercial radio operator licenses:

- General Radiotelephone Operator License (GROL) with Ship Radar Endorsement (PG0213831)

- Second Class Radiotelegraph Operator's Certificate with Ship Radar Endorsement (T200000008)

- GMDSS Radio Operator/Maintainer License with Ship Radar Endorsement (DB00000018)

I am currently employed as a Data Communications Specialist II by the New York State Workers' Compensation Board (NYSWCB). I had previously been employed as a broadcast operator by AM and FM broadcast stations in Upstate New York's Capital District Area.

I would like to congratulate Panel and the Commission on their work to date, and offer my own comments.

AMATEUR RADIO – "WHEN ALL ELSE FAILS"

Amateur radio can represent a relatively inexpensive and highly effective method of providing emergency communications. Amateur radio offers the following benefits:

- A pool of trained and experienced radio operators.

- Interoperability. Amateur radio operators and equipment are not licensed for single frequencies (or small groups of frequencies). Amateur radio operators are instead authorized for whole bands, which contain several frequencies. Individual amateur radio operators do not "own" any particularly frequency, but can cooperate in the efficient use of frequencies by using pre-established band plans, and emergency frequency plans, which may be tailored to the need.

- Amateur radio stations are de-centralized and can be self-sufficient. They only require an antenna, and a suitable power source (vehicle power, generators, or batteries).

- Amateur radio stations do not exclusively rely on single repeaters. Alternate repeater sites and simplex frequencies are available to licensed amateur radio operators.

- Amateur radio stations do not rely on infrastructure components which are prone to single-point failures, such as commercial power, centralized switching points, leased data circuits, or dialup-telephone circuits.

PRE-POSITIONING OF AMATEUR RADIO EQUIPMENT AND ANTENNAS AT EOCS AND SERVED AGENCY LOCATIONS

As much as possible, the Commission and FEMA should work to require (or strongly encourage) EOCs and served agencies to stock, predeploy, and preinstall amateur radio equipment and antennas for fixed-site installations, and "go kits" for portable and mobile installations. Furthermore, additional equipment, antennas, feedlines, and related components should also be stocked to allow for the rapid repair or replacement of any equipment or antennas which may be damaged or destroyed by storms.

The pre-positioning of fixed, portable, and mobile amateur radio assets at EOCs and served agency sites would provide the following benefits.

- Insuring that complete, tested, operational stations are in place at critical locations before the occurrence of an incident.

- Allowing for continuous operator training and familiarization at each station location.

- Allowing the EOCs to develop working relationships with ARES groups, RACES groups, and amateur radio clubs.

- Allow for periodic testing to make sure that equipment and antenna installations are working properly and have adequate coverage.

- Allow for testing to make sure that there are no interference issues from or to other equipment, and allowing for the opportunity to identify, diagnose and address any problems which may occur in advance of the actual need.

- Allowing an EOC or served agency to develop its own local staff of amateur radio operators, who could be deployed almost immediately to help cover an initial amateur radio response. If the number of available on-staff operators is insufficient to support the need, the entity could then draw on other available amateur radio resources through ARES and/or RACES.

- Avoid problems and delays which would result from the inability to locate, obtain, transport, or install antennas and equipment in a timely matter during an actual disaster.

CLUB/CLUB CALL SIGNS

Any entity which has four or more amateur operators may form an amateur radio club and apply for a club station license and call sign under §97.17(b)(2). The Commission and FEMA should encourage this practice. The entity would then receive a unique station call sign, which would provide the following benefits:

- Station call sign at the EOC or served agency would always remain the same, regardless of who the actual control operator is.

- EOC and served agency station call signs would not change as a result of operator breaks or shift changes.

- Any automated stations (including repeaters, packet radio stations, beacons, amateur radio weather stations, and APRS stations (Automatic Position Reporting Systems), associated with the EOC or the served agency would always be operating under a constant call sign.

- The constant EOC and served agency station call signs could be incorporated into disaster plans.

- File copies of any amateur radio messages which are originated, relayed, or received by an EOC or served-agency club station would be marked with the unchanging club call sign, and would be owned by the club station. The message copies would then be filed with the club station records, and would be available to the EOC or served agency.

One example of an EOC call sign is the New York State Emergency Management Office in Albany, NY:

Licensee Name	Entity	Initial Systematic Call Sign
NY State EOC	New York State Emergency Management Office	KC2FTD (active)

CLUB VANITY CALL SIGNS

Amateur Radio Clubs associated with EOCs and served agency locations would also have the option of applying for a vanity call sign under §97.19. Several such vanity call signs have been established in the New York State Capital District Area:

Licensee Name	Entity	Initial Systematic Call Sign	New Vanity Call Sign
Rensselaer County ARES/RACES Amateur Radio Association	Rensselaer County ARES/RACES (upstate New York)	KC2HLB (cancelled and replaced by vanity call sign)	K2REN

Licensee Name	Entity	Initial Systematic Call Sign	New Vanity Call Sign
Albany County ACES Radio Club	Albany County RACES (upstate New York)	KC2MKF (cancelled and replaced by vanity call sign)	K2ALB
American Red Cross of Northeastern New York Radio Club	American Red Cross of Northeastern New York (ARCNENY)	KC2LQK (cancelled and replaced by vanity call sign)	WB2ARC

TRAINING

I concur with the Panel's recommendations that emergency communications personnel be required to take (at a minimum) IS-100 (Introduction to ICS) and IS-700 (Introduction to NIMS). Adequate training is essential to achieve and maintain the required level of professionalism, and to improve the ability of amateur radio operators to work with the various agencies which would be involved in an incident response. Many commenters in this proceeding have provided accounts of problems (some of which were safety-related) which resulted from the use of amateur operators who lacked training or experience.

Notwithstanding the opinions of some commenters, training should not be eschewed because some do not wish to make the necessary commitments of time and/or funds to obtain training.

Although the ARRLs Amateur Radio Emergency Communications Course (ARECC) training is available on-line, it is chargeable. However, in past years, grants made by the Corporation for National and Communications Service (CNCS), and by United Technologies have enabled the reimbursement of thousands of amateur radio operators who successfully completed the ARECC courses. None of this money was wasted, because the

trainees had to provide their own money up front, and were not reimbursed unless they successfully completed the program.

Courses on the Incident Command System (ICS) and the National Incident Management System (NIMS) are available on-line at no cost from the FEMA Independent Study Web Site:

FEMA Independent Study Program:

http://www.training.fema.gov/EMIWeb/IS/crslist.asp

IS-100 - IS-100 Introduction to Incident Command System, I-100

http://www.training.fema.gov/EMIWeb/IS/is100.asp

IS-200 ICS for Single Resources and Initial Action Incidents

http://ww.training.fema.gov/EMIWeb/IS/is200.asp

IS-700 National Incident Management System (NIMS), An Introduction

http://ww.training.fema.gov/EMIWeb/IS/is700.asp

IS-800 National Response Plan (NRP), An Introduction

http://www.training.fema.gov/EMIWeb/IS/is800.asp

NOTE: The IS-800 course is to be replaced with a revised IS-800A course on or about August 15, 2006.

EMP (ELECTROMAGNETIC PULSE)

Mr. Nickolaus E. Leggett and Donald J. Schellhardt, Esquire have filed comments related to Electromagnetic Pulse (EMP) effects. Terrorists and rogue nations are increasingly likely to develop nuclear and EMP capabilities over time.

The nation's economy is already heavily dependent on electronic devices, and will become more so in the future. Many effective EMP products are already available from firms such as PolyPhaser.

A Notice of Inquiry (NOI) and/or a Notice of Proposed Rulemaking (NPRM) could solicit valuable and timely information from EMP experts from both the military and the private sector.

Many Emergency Operations Centers (EOCs) which were built during the Cold War era featured hardened radio rooms. These rooms were fully-shielded, and acted as Faraday cages. Electronic and radio equipment housed in these rooms stood a much-higher probability of surviving an EMP event.

Unfortunately, hardened radio rooms are now often omitted in the design of new EOCs, or in the relocation or renovation of EOCs.

The Commission and FEMA should work to require or encourage the use of Faraday cages to protect radio and electronic equipment. The size of the Faraday cages would depend on the actual application, and could be scaled to fit the need, and the available time and financial resources:

- On the small scale, unused, spare, and reserve radio and radio equipment could be stored in properly screened boxes and cabinets when not in use. These would survive an EMP event, and be available for use after the EMP event. This strategy could be implemented relatively quickly with relatively little cost.

- On the medium scale, designated radio rooms and computer rooms could be screened. Equipment in these rooms would survive and be available before, during, and after an EMP event.

- On the high end, entire EOCs could be screened. This strategy would be the most time-consuming and the most expensive. However, the time and financial impacts of this could be minimized by incorporating it into new construction or major renovations.

EMERGENCY RESPONDER STATUS – TELECOMMUNICATIONS PERSONNEL

I concur with the panel's recommendation that qualified telecommunications personnel be afforded emergency responder status under the Stafford Act. The New Orleans public safety radio system failed, and vendor personnel from M/A Com were not able to pass through law enforcement roadblocks in a timely manner to service the system.

The Commission and FEMA should develop and issue recognized credentials for persons in the telecommunications field who have proper training and experience. The Commission and FEMA should also work to make sure that State and Local Law Enforcement are aware of the credentials.

The program should be designed so that it is not perceived to be an infringement of the rights of state and local jurisdictions. Congress has determined that telecommunications is a federal issue, and has given jurisdiction to the Federal government.

There is also a practical consideration. The issuance of telecommunications credentials from a recognized Federal source (such as the Commission) is much more practical than having credentials issued by the 50 states, or more than 3000 counties in the U.S..

In order to maximize the likelihood that the telecommunications credentials are recognized and honored, the credentials should contain the responder's picture, the name and seal of the FCC, and the name and seal of FEMA and/or the Department of Homeland Security. The credentials should also have some form of anti-tamper protection.

EMERGENCY RESPONDER STATUS – AMATEUR RADIO OPERATORS

The definition of "telecommunications personnel" should also include qualified amateur radio operators. The required amateur radio training and experience may be derived from multiple sources:

- ARRL Amateur Radio Emergency Communications Courses (ARECC)

- Introduction to Incident Command (FEMA IS-100)

- Basic Incident Command (FEMA IS-200)

- National Incident Management System, An Introduction (FEMA IS-700)

- National Response Plan (NRP), An Introduction (FEMA IS-800)

- First Aid (American Red Cross, American Heart Association, etc.)

- CPR (American Red Cross, American Heart Association, etc.)

- (AED) Automatic External Defibrillator (American Red Cross, American Heart Association, etc.)

- Membership in one or more of:

  - Radio Amateur Civil Emergency Service (RACES)

  - Amateur Radio Emergency Service (ARES)

  - Military Affiliate Radio Service (MARS)

EMERGENCY RESPONDER STATUS – INFORMATION TECHNOLOGY (IT) PERSONNEL

Many telecommunications and radio systems now include Information Technology (IT) components, such as voice over IP (VoIP), video conferencing, software-defined radios, etc.. These systems may be mission-critical for the continued operation of state and local government agencies, non-governmental organizations (NGOs), and private business and industry.

Information Technology (IT) personnel may be required to participate as emergency responders to re-establish pre-existing IT systems, or build new IT systems to support the response and recovery efforts. The American Red Cross has a separate disaster response function known as Disaster Computer Operations (DCO), as well as a Communications function (COM).

The technical personnel required to support the IT systems may not fit the current definitions of "telecommunications workers", "radio technicians", or "radio engineers". However, their timely participation may be critical to the effectiveness of the response and recovery efforts. These IT personnel would include programmers, analysts, and technicians for systems programming, data communications, database programming, applications programming, and user support.

- Introduction to Incident Command (FEMA IS-100)

- Basic Incident Command (FEMA IS-200)

- National Incident Management System, An Introduction (FEMA IS-700)

- National Response Plan (NRP), An Introduction (FEMA IS-800)

- First Aid (American Red Cross, American Heart Association, etc.)

- CPR (American Red Cross, American Heart Association, etc.)

- (AED) Automatic External Defibrillator (American Red Cross, American Heart Association, etc.)

- Relevant industry training and experience (to be determined)

Some additional work would have to done to determine the appropriate standards for industry training and experience, as well as finding a suitable authority and establishing a mechanism to verify the qualifications and issue the credentials.

RESTRICTIVE COVENANTS

In the Commission's Second Report and Order 98-273 regarding Over-the-Air Reception Devices (OTARD), the Commission prohibited "any restriction, including but not limited to any state or local law or regulation, including zoning, land-use, or building regulation, or any private covenant, contract provision, lease provision, homeowners' association rule or similar restriction on properly" that would serve to impair the installation, maintenance, or use of antennas which provide for direct broadcast satellite (DBS) service, Multichannel Multipoint Distribution Service (MMDS), or over the air (OTA) television reception.

This pre-emption reflected a federal interest in allowing U.S. residents to enjoy access to information and entertainment programming.

The Commission has already acted to protect amateur radio antenna installations in Memorandum Opinion and Order 85-506, Federal preemption of state and local regulations pertaining to Amateur radio facilities (PRB-1).

However, restrictions contained in private covenants, contract provisions, lease provisions, homeowner's association rules, etc. are become increasingly prevalent. There are whole neighborhoods, developments, and even communities in which licensed amateur radio operators (or persons who wish to become amateur radio operators) are not allowed to install, maintain, or use the necessary antennas.

As a result, these operators are not allowed to develop many of the essential practical skills, such as the design, construction, and use of antennas and station equipment, as well as the necessary operating skills, such as use of the various communications modes (voice, CW, teletype, data, and imaging modes), participation in networks and drills, and traffic (message) handling.

Furthermore, these neighborhoods, developments, and communities would not be served by local resident amateur radio operators during an incident or disaster.

As noted by other commenters, the implementation of restrictive covenants and hoomeowner's association (HOA) rules are often being required by lending institutions, and in some cases, by local governments. These restrictions go into effect before the actual lending of money and construction of the housing, and well before eventual sale to the homeowner.

The federal interest in promoting, protecting and supporting ham radio is already expressed in the rules which establish the amateur radio service:

§97.1 Basis and purpose.

The rules and regulations in this Part are designed to provide an amateur radio service having a fundamental purpose as expressed in the following principles:
- (a) Recognition and enhancement of the value of the amateur service to the public as a voluntary noncommercial communication service, particularly with respect to providing emergency communications.
- (b) Continuation and extension of the amateur's proven ability to contribute to the advancement of the radio art.
- (c) Encouragement and improvement of the amateur service through rules which provide for advancing skills in both the communications and technical phases of the art.
- (d) Expansion of the existing reservoir within the amateur radio service of trained operators, technicians, and electronics experts.
- (e) Continuation and extension of the amateur's unique ability to enhance international goodwill.

DURATION OF RACES DRILLS

Mr. Robert Hejl, W2IK, has suggested that the current limitation of one hour per week for RACES drills in §97.407(e)(4) does not allow for adequate "deployment drills", which would be enable RACES personnel to "practice remote deployment techniques coupled with on air training procedures".

§97.407(e)(4) does contain a provision for two 72-hour drills per calendar year:

> With the approval of the chief officer for emergency planning in the applicable State, Commonwealth, District or territory, however, such tests and drills may be conducted for a period not to exceed 72 hours no more than twice in any calendar year.

Although this provision may allow some of the flexibility which is sought by Mr. Hejl, certain points should be considered:

- Does the phrase "State, Commonwealth, District or territory" adequately cover all possible RACES jurisdictions? In many cases, RACES is organized at the county level.

- Is it necessary for the approval to be limited to the chief officer for emergency planning? Should the chief radio officer also be empowered to authorize a longer term drill?

- Is the twice per calendar year restriction reasonable? Should it be expanded to 4 times per year, or even 12 times per year?

It should be kept in mind that the original intent of the one hour per week limitation was to prevent mis-use and abuse of RACES for communications which should be handled by other services. Any revision to this rule should "strike the correct balance" between increased flexibility and the prevention of mis-use and abuse of RACES.

EMERGENCY MESSAGE FORMATS

At least one commenter has suggested that amateur radio emergency networks and message formats be patterned after those used by the Military Affiliate Radio Service (MARS). The existing ARRL National Traffic System (NTS) message format is more widely-known and more extensively-used than that of MARS. The ARRL NTS format is also used for non-emergency messages as well as for emergency messages in ARES and RACES.

ADMINISTRATIVE CONSIDERATIONS

The Commission has demonstrated great flexibility in accepting and processing applications for Special Temporary Authorizations (STAs) and licenses in the aftermath of Hurricane Katrina.

The Commission's Universal Licensing System (ULS) has also served as a well-designed application which provides excellent support for processing of license and STA applications for the amateur radio service, and other radio services. ULS allows a licensee to submit applications (new, modification, and renewal), check on the status of applications, print reference copies of licenses, etc.. However, during an incident, issues may arise with the mailing and posting of the actual license documents:

- Deliveries by the U.S. Postal Service and other carriers may be delayed or suspended.

- Delivery addresses may be inaccessible, damaged, or destroyed.

- A licensee might be in technical violation of the posting requirements for licenses and authorizations if the original documents are not received in a timely manner.

Some possible avenues of relief might include:

- Allowing for a special mechanism to defer the actual printing and mailing of license documents until they can be reliably mailed and received.

- Providing support for some form of temporary licensee mailing address.

- Allowing the printing and posting of "reference copies" from the ULS Web Site as a temporary measure until the actual license documents are received.

Respectfully Submitted

Gerald W. Murray